Implementation of a HELP-Based Labor and Delivery Log

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The Obstetrics/Gynecology Executive Committee at Rex Hospital recommended automation of the labor and delivery log entry process in order to facilitate Birth Center statistical reporting and provide on-line labor and delivery log access to nurses and obstetricians. Following a four-month period of prototyping and revisions, the HIS Clinical Systems Research department developed and implemented the Labor/Delivery Log module in February of 1995 as an extension of the hospital's clinical information system, 3M HELP™, the commercial version of the HELP System developed by Warner and associates at LDS Hospital. The user interface employs multiple-choice menus and selection lists wherever feasible to promote rapid data entry. Labor and delivery log information is stored together in one file.

When a patient is admitted to the Birth Center, the nurse uses the Labor Log program to identify the patient and enter the following data: nurse, labor status, cervical dilation, risk factors (e.g. diabetes mellitus, preterm labor), pediatrician, and maternal transport (if applicable). This data is updated as needed as the patient progresses through labor to delivery. The Birth Center Patient List program displays the labor log data for all Birth Center patients, replacing the "whiteboard" commonly used in obstetrical wards. The labor log data, together with the date and time of the last log update, is also made available to obstetricians through the M.D. Patient List and M.D. Rounds Report programs (also in-house-developed).

Following delivery, the nurse uses the Delivery Log program to identify the patient and enter all pertinent information (e.g. fetal monitor, gestational period, induction method, mode of delivery, episiotomy, infant Apgar score, infant weight, anomalies). In the event of multiple births, a delivery log record is created for each infant. The delivery log can be viewed by nurses through the Birth Center Patient List program, by obstetricians through the M.D. Rounds Report program, and by Risk Management staff through a separate viewing program.

An audit trail records all changes made to delivery log information. When a user changes a data item, a selection list appears for the reason for change (specify physician, wrong physician, wrong date/time, wrong information, or wrong patient). A separate audit trail file contains a "snapshot" of each saved log entry and includes the employee number of the user who entered or changed the data, the save date and time, and the reasons for any data changes. The audit trail for any patient can be viewed through the Birth Center Audit Review program. A batch program running on a nightly basis generates a printed report identifying delivery log modifications for all current and discharged Birth Center patients entered within the past 24 hours.

Statistical reports can be obtained through the Birth Center Statistics program. The Birth Center manager enters the month and year for the report, which includes the total number of deliveries and the number and percentages for data such as C-sections, twins, triplets, neonatal deaths and birth weights. The report can be viewed on-line or printed.

The Labor/Delivery Log module has been "live" at Rex for two months. Requests for program modifications to accommodate additional data and a daily delivery report have been submitted. A formal post-implementation evaluation is planned for late summer of 1995.